

SUPPORTING STRUCTURE

BACKGROUND OF THE INVENTION

The present invention relates to a supporting structure for holding and supporting an object, and more particularly, to a supporting structure bendable or foldable with any angle.

A conventional supporting structure, for example, the supporting structure as disclosed in U.S. Patent No. 6,234,435, includes a flexible body member made of aluminum. The exterior side surface of the body member is coated with an exterior covering member with a bellow configuration. The exterior covering member is fabricated from plastic material for bending or folding the supporting structure with a specific orientation. However, there is a gap between the body member and the exterior covering member, that is, a portion of the body member is not in contact with the exterior covering member. A suction disk and a fixing seat are pivotally connected to two ends of the supporting structure, such that one end of the supporting structure can be attached to a wall surface. In application, the supporting structure is bent to a specific location for holding an object to be supported.

As the above supporting structure is formed by assembling two individual members, that is, the body member and the exterior covering member together by an additional assembly step, which consumes extra time and labor. Further, the gap existing between body member and the exterior covering member causes difficulty in bending and folding the supporting structure.

BRIEF SUMMARY OF THE INVENTION

The present invention provides an improved supporting structure. The improved supporting structure is fabricated by a single mold, such that the fabricating time and labor are reduced.

5 The present invention further provides an improved supporting structure which is formed by a single mold, such that no gap is formed between the body member and the exterior covering member. Therefore, it is easier to bend and fold the supporting structure.

10 The improved supporting structure provided by the present invention comprises a body member made of flexible material and an exterior covering member integrally injected around the body member. Therefore, the body member is tightly wrapped by the exterior covering member and is bendable and foldable by operating the exterior covering member. The supporting structure includes a suction device 15 at one end thereof, and a holding device at the other end thereof. Therefore, the supporting device can be attached to a wall surface by the suction device, while the other end of the supporting structure can hold an object by the holding device.

20 In one embodiment, the body member is made of flexible aluminum with a roughened surface, allowing the exterior covering member made of soft plastic material tightly wrapping the body member therein.

BRIEF DESCRIPTION OF THE DRAWINGS

These, as well as other features of the present invention, will become apparent upon reference to the drawings wherein:

Figure 1 shows perspective view of a supporting structure provided by the present invention;

5 Figure 2 shows a cross sectional view of the supporting structure;

Figure 3 shows an exploded view of the supporting structure;

Figure 4 shows the assembly of the supporting structure;

Figure 5 is a cross sectional view of Figure 4; and

Figure 6 shows the operation of the supporting structure.

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DETAILED DESCRIPTION OF THE INVENTION

As shown in Figures 1 and 2, the supporting structure provided by the present invention comprises an elongate body member 1. Preferably, the body member is made of flexible material such as aluminum material to be bendable or foldable with any degree as 15 desired.

An exterior covering member 2 is formed to wrap around the elongate body member 2. In this embodiment, the exterior covering member 2 is formed by direct mold injection onto the side surface of the body member 2 with two connecting ends 11 and 12 exposed 20 thereby. In this embodiment, the exterior covering member 2 is fabricated from soft plastic material with bellow configuration. That is, the exterior covering member 2 includes alternative recessed slots 21 and protruding ribs 22 along an elongate direction thereof. Further, the

exterior covering member 2 has a gradually reduced diameter from two ends to the center thereof.

The elongate body member 1 made of flexible aluminum material has a roughened surface, such that the exterior covering member 2 formed of soft plastic material body can tightly wrap around the body member 1 without forming any gap in between.

Referring to Figure 3, in this invention, a suction device 3 and a holding device 4 are formed at two exposed connecting ends 11 and 12 of the elongate member 1. Referring to Figures 4 and 5, the suction device 3 includes a suction disk to attach the body member 1 to a wall surface, such as a cement wall surface or a glass wall surface. The suction device 3 includes a connecting member 31 through which a connecting hole 311 is formed, allowing the connecting end 11 to be inserted therein.

The holding device 4 may be magnetic to absorb certain type of object. Alternatively, the holding device 4 includes a hand-free piece, such that the phone can be disposed in the hand-free piece and held by the supporting structure. Other type of supporting object or set can also be connected to the end 12 as the holding device 4. The holding device 4 includes a connecting member 41 through which an elongate hole 411 is formed for the connecting end 12 to be inserted therein.

As shown in Figure 6, during operation, the suction device 3 is adhered to the wall surface, and the supporting structure 10 is bent or folded to a desired position, such that the holding device 4 is positioned for holding an object to be supported.

As the body member 1 and the exterior covering member 2 are integrated together, no additional assembly step is required. Further, the tightness between the body member 1 and the exterior covering member 2 provides an easier bending and folding property.

5 This disclosure provides exemplary embodiments of the present invention. The scope of this disclosure is not limited by these exemplary embodiments. Numerous variations, whether explicitly provided for by the specification or implied by the specification, such as variations in shape, structure, dimension, type of material or
10 manufacturing process may be implemented by one of skill in the art in view of this disclosure.